(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関
国際事務局

(43) 国際公開日
2004 年7 月29 日 (29.07.2004)

PCT

(10) 国際公開番号
WO 2004/063809 A1

(51) 国際特許分類[7]: G02F 1/377

(21) 国際出願番号: PCT/JP2003/016488

(22) 国際出願日: 2003 年12 月22 日 (22.12.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:
特願2003-8780 2003 年1 月16 日 (16.01.2003) JP

(71) 出願人 (米国を除く全ての指定国について): 松下電器産業株式会社 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.) [JP/JP]; 〒571-8501 大阪府 門真市大字門真1006番地 Osaka (JP). 日本碍子株式会社 (NGK INSULATORS, LTD.) [JP/JP]; 〒467-8530 愛知県 名古屋市 瑞穂区須田町2番56号 Aichi (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 水内 公典 (MIZUUCHI,Kiminori) [JP/JP]; 〒572-0019 大阪府 寝屋川市 三井南町30-5-206 Osaka (JP). 山本 和久 (YAMAMOTO,Kazuhisa) [JP/JP]; 〒569-1044 大阪府 高槻市 上土室3-30-4 Osaka (JP). 今枝 美能留 (IMAEDA,Minoru) [JP/JP]; 〒460-0012 愛知県 名古屋市 中区千代田4丁目20番24号701 Aichi (JP). 川口 竜生 (KAWAGUCHI,Tatsuo) [JP/JP]; 〒501-0217 岐阜県 本巣郡 穂積町生津外宮前町1丁目119番地 Gifu (JP). 吉野 隆史 (YOSHINO,Takashi) [JP/JP]; 〒490-1105 愛知県 海部郡 甚目寺町新居屋茶屋76-2 Aichi (JP).

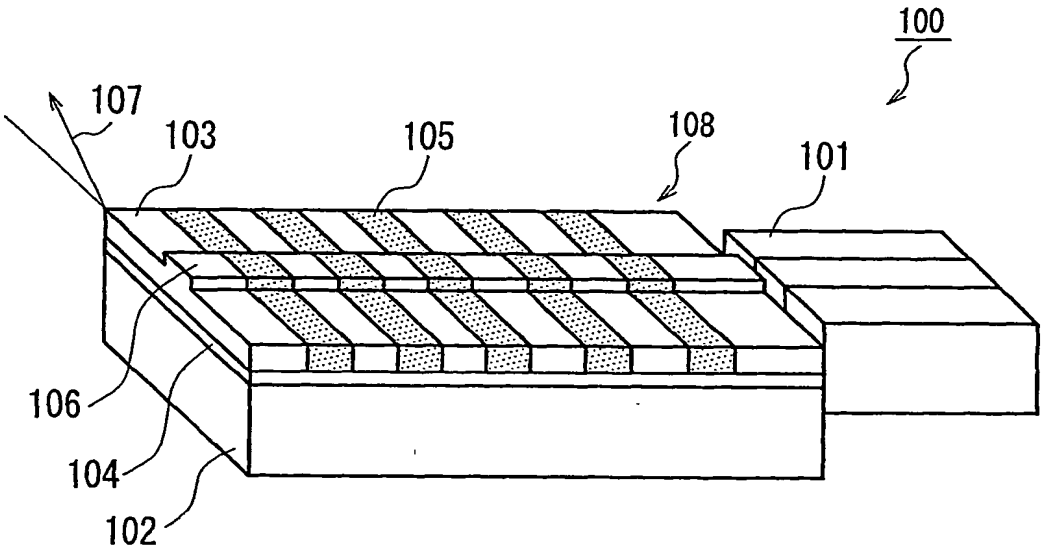
(74) 代理人: 特許業務法人池内・佐藤アンドパートナーズ (IKEUCHI SATO & PARTNER PATENT ATTORNEYS); 〒530-6026 大阪府 大阪市 北区天満橋1丁目8番30号OAPタワー26階 Osaka (JP).

(81) 指定国 (国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[続葉有]

(54) Title: OPTICAL WAVEGUIDE DEVICE, COHERENT LIGHT SOURCE USING SAME AND OPTICAL APPARATUS HAVING SAME

(54) 発明の名称: 光導波路デバイスならびにそれを用いたコヒーレント光源およびそれを備えた光学装置



(57) Abstract: An optical waveguide device comprises a substrate composed of a non-linear optical material and a periodic polarization reversal structure having the same composition as the non-linear optical material. The periodic polarization reversal structure has a refractive index profile that is dependent on its structure.

(57) 要約: 非線形光学材料からなる基板と、この非線形光学材料と同一の組成からなる周期的な分極反転構造とを備え、分極反転構造は、その構造に依存した屈折率分布を有する。

WO 2004/063809 A1

(84) 指定国 (広域): ARIPO 特許 (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許 (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

添付公開書類:
— 国際調査報告書

２文字コード及び他の略語については、定期発行される各*PCT*ガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/16488

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[7] G02F1/377

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl[7] G02F1/37, G02B6/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2004
Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
IEL, online, ISI, Web of Science, JICST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 07-122809 A (Oki Electric Industry Co., Ltd.), 12 May, 1995 (12.05.95), (Family: none)	1-12
A	KITAOKA, Y. et al., Intracavity second-harmonic generation with a periodically domain-inverted $LiTaO_3$ device, OPTICS LETTERS, Vol.21, No.24, December, 1996, pages 1972 to 1974	1-12
A	Hu, Z.H. et al., Phase-mapping of periodically domain-inverted $LiNbO_3$ with coherent X-rays, Nature, Vol.392, April, 1998, pages 690 to 693	1-12
A	Restoin, C. et al., Ferroelectric domain inversion by electron beam on $LiNbO_3$ and Ti: $LiNbO_3$, Journal of Applied Physics, Vol.88, No.11, December, 2000, pages 6665 to 6668	1,3-12

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 March, 2004 (16.03.04)	30 March, 2004 (30.03.04)
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/16488

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KAWAGUCHI, T. et al., New ridge-type $LiNbO_3$ optical waveguide for high-power QPM-SHG laser, Technical Report of IEICE, LQE2002-8, 05. 2002, pages 29 to 32	3-7